

CLAIMS

1                     1.       A method of treating a skin surface with a wrinkle, the skin  
2       surface overlying a collagen containing tissue, comprising:  
3                     identifying a person suspected of having a skin surface with a wrinkle;  
4                     providing an energy source with an energy delivery surface;  
5                     positioning the energy delivery surface in contact with the skin surface;  
6                     creating a reverse thermal gradient, wherein a temperature of the skin  
7       surface is less than a temperature of the collagen containing tissue;  
8                     delivering energy through the skin surface to the collagen containing  
9       tissue and contract at least a portion of the collagen containing tissue with  
10       controlled cell necrosis; and  
11                    reducing a depth of the wrinkle.

1                     2.       The method of claim 1, wherein the electrolytic media is an  
2       electrolytic solution.

1                     3.       The method of claim 1, wherein the electrolytic media is an  
2       electrolytic gel.

1                     4.       The method of claim 1, wherein the energy source is an RF energy  
2       source.

1                     5.       The method of claim 4, further comprising:  
2                     an RF electrode coupled to the RF energy source, the RF electrode  
3       including an RF energy delivery surface positionable on the skin surface.

*Sub 2*

- 1 6. The method of claim 5, further comprising:  
2 a source of electrolytic media coupled to RF electrode.

- 1 7. The method of claim 1, wherein the energy source is a light  
2 source.

- 1 8. The method of claim 7, wherein the light source is a coherent light  
2 source.

- 1 9. The method of claim 8, further comprising:  
2 a coherent light delivery device configured to be coupled to the coherent  
3 light source.

- 1 10. The method of claim 7, wherein the light source is an incoherent  
2 light source.

*Sub 4*

- 1 11. The method of claim 1, wherein the energy source is a microwave  
2 source.

- 1 12. The method of claim 11, wherein the energy source is an  
2 ultrasound source.

*Sub 3*

- 1 13. The method of claim 1, wherein the collagen containing tissue site  
2 is partially denatured by cleaving heat labile cross-links of collagen molecules.

*Sub 6*

- 1 14. The method of claim 1, further comprising:  
2 a cooling medium configured to create a cooling of the skin surface.

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1 15. The method of claim 1, wherein the collagen containing tissue site is  
2 in a subdermal layer.

1 16. The method of claim 1, wherein the collagen containing tissue site is  
2 in a deep dermal layer.

1 17. The method of claim 1, wherein the collagen containing tissue site is  
2 in a subcutaneous layer.

1 18. The method of claim 1, wherein the collagen containing tissue site is  
2 in facial and muscle tissue.

1 19. The method of claim 1, wherein the temperature of the collagen  
2 containing tissue site does not exceed 80 degrees C.

1 20. The method of claim 1, wherein the temperature of the collagen  
2 containing tissue site does not exceed 75 degrees C.

1 21. The method of claim 1, wherein the temperature of the collagen  
2 containing tissue site does not exceed 70 degrees C.

1 22. An apparatus for applying energy to a skin surface with a wrinkle,  
2 comprising:

3 an identification means for detecting a skin surface with a wrinkle;

4 an electrolytic media means;

5 an electrolytic media delivery means adapted to receive the electrolytic  
6 media and release the electrolytic media to a skin surface;

7 an RF electrode means coupled to the electrolytic media means , wherein

8 the electrolytic media means delivers energy to the skin surface to create a  
9 controlled cell necrosis and reduce a depth of the wrinkle.

1 23. The method of claim 22, wherein the electrolytic media is an  
2 electrolytic solution.

1 24. The method of claim 22, wherein the electrolytic media is an  
2 electrolytic gel.

1 25. The apparatus of claim 22, wherein the RF electrode means is  
2 separated from the skin surface.

1 26. The apparatus of claim 22, wherein the RF electrode means is  
2 positioned in an interior of the electrolytic media delivery means.

1 27. The apparatus of claim 22, wherein the RF electrode means is  
2 positioned on an exterior surface of the electrolytic media delivery means.

1 28. The apparatus of claim 22, wherein the electrolytic media means  
2 receives sufficient energy from the RF electrode means to create a contraction of  
3 collagen in the skin.

1 29. The apparatus of claim 22, wherein the electrolytic media means  
2 receives sufficient energy from the RF electrode means to deliver energy through  
3 a papillary dermis layer.

1 30. The apparatus of claim 22, wherein the electrolytic media means  
2 receives sufficient energy from the RF electrode means to supply energy through a

3 reticular dermis layer of the skin.

1 31. The apparatus of claim 22, wherein the electrolytic media means  
2 receives sufficient energy from the RF electrode means to supply energy through a  
3 subcutaneous layer of the skin and an underlying soft tissue.

1 32. The apparatus of claim 22, wherein the RF electrode means is  
2 coupled to an RF energy source.

1 33. The apparatus of claim 22, further comprising:  
2 a sensor means coupled to skin surface.

1 34. The apparatus of claim 22, further comprising:  
2 a feedback control means coupled to the sensor means and to an RF  
3 energy source means.

1 35. A method for treating skin, comprising:  
2 identifying a person suspected of having a skin surface with a wrinkle;  
3 providing an apparatus for applying energy to the skin surface, the  
4 apparatus including an electrolytic media, a member, and an RF electrode;  
5 transferring energy from the RF electrode to the electrolytic media to  
6 create an energy delivery electrolytic media;  
7 releasing the energy delivery electrolytic media from the member to the  
8 skin surface;  
9 treating the skin surface with energy from the energy delivery electrolytic  
10 media; and  
11 reducing a depth of the wrinkle.

- 1           36.    The method of claim 35, wherein the electrolytic media is an  
2 electrolytic solution.
- 1           37.    The method of claim 35, wherein the electrolytic media is an  
2 electrolytic gel.
- 1           38.    The method of claim 35, wherein energy from the energy delivery  
2 electrolytic media to the skin surface creates a controlled cell necrosis.
- 1           39.    The method of claim 35, wherein the energy delivery electrolytic  
2 media creates a tightening of the skin.
- 1           40.    The method of claim 35, wherein the energy delivery electrolytic  
2 media creates a tightening of a subcutaneous tissue.
- 1           41.    The method of claim 35, wherein the energy delivery electrolytic  
2 media receives sufficient energy from the RF electrode to create a controlled cell  
3 necrosis of the skin surface.
- 1           42.    The method of claim 35, wherein the energy delivery electrolytic  
2 media receives sufficient energy from the RF electrode to create a controlled zone  
3 of cell necrosis of the skin surface.
- 1           43.    The method of claim 35, wherein the energy delivery electrolytic  
2 media receives sufficient energy from the RF electrode to create a controlled zone  
3 of collagen contraction of a dermis and fibrous septae of a subcutaneous tissue.

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1           44.     The method of claim 35, wherein the energy delivery electrolytic  
2 media receives sufficient energy from the RF electrode to create a controlled zone  
3 of skin surface ablation.

1           45.     The method of claim 35, wherein the energy delivery electrolytic  
2 media receives sufficient energy from the RF electrode to create a controlled zone  
3 of skin tightening.

1           46.     The method of claim 35, wherein the energy delivery electrolytic  
2 media receives sufficient energy from the RF electrode to create a controlled zone  
3 of subcutaneous tightening.

1           47.     The method of claim 35, wherein the electrolytic media receives  
2 sufficient energy from the RF electrode to create a contraction of collagen in the  
3 skin.

1           48.     The method of claim 35, wherein the electrolytic media receives  
2 sufficient energy from the RF electrode to create a controlled cell necrosis of the  
3 skin surface.

1           49.     The method of claim 35, wherein the electrolytic media receives  
2 sufficient energy from the RF electrode to supply energy through a papillary  
3 dermis layer.

1           50.     The method of claim 35, wherein the electrolytic media receives  
2 sufficient energy from the RF electrode to supply energy through a reticular  
3 dermis layer of the skin.

1                    51.     The method of claim 35, wherein the electrolytic media  
2 receives sufficient energy from the RF electrode to supply energy through a  
3 subcutaneous layer and an underlying soft tissue.

1                    52.     The method of claim 35, wherein the RF electrode receives a  
2 controlled delivery of energy from an RF power source.

1                    53.     The method of claim 35, further comprising:  
2                    sensing a temperature of the skin surface during delivery of the energy  
3 delivery electrolytic media to the skin surface.

1                    54.     The method of claim 35, further comprising:  
2                    sensing a temperature of the skin surface after delivery of the energy  
3 delivery electrolytic media to the skin surface.

1                    55.     The method of claim 35, further comprising:  
2                    sensing a temperature of a tissue underlying the skin surface during the  
3 delivery of the energy delivery electrolytic media to the skin surface.

1                    56.     The method of claim 35, further comprising:  
2                    sensing a temperature of a tissue underlying the skin surface after delivery  
3 of the energy delivery electrolytic media to the skin surface.

1                    57.     The method of claim 35, further comprising:  
2                    sensing an impedance of the skin surface during delivery of the energy  
3 delivery electrolytic media to the skin surface.



1 58. The method of claim 35, further comprising:  
2 sensing an impedance of the skin surface after delivery of the energy  
3 delivery electrolytic media to the skin surface.

1 59. The method of claim 35, further comprising:  
2 sensing an impedance of a tissue underlying the skin surface during the  
3 delivery of the energy delivery electrolytic media to the skin surface.

1 60. The method of claim 35, further comprising:  
2 sensing an impedance of a tissue underlying the skin surface after delivery  
3 of the energy delivery electrolytic media to the skin surface.

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